**Hospital Center**

**Transfusion Guidelines: ADULT PLASMA**

**GUIDANCE STATEMENT**

These represent guidelines for plasma transfusion. These guidelines include conditions for which transfusion may be considered reasonable, but not mandatory, practice. The decision to transfuse should not be based solely on a single lab result and represents a clinical consideration that takes into account the potential benefits and risks of the transfusion.

One unit of plasma contains approximately 300 ml although the volume of each unit may vary. 10-15 ml/kg is the usual adult dose for plasma products. In a 70 kg patient this represents 3-4 units and will approximately increase coagulation factors by 15%.

Multiple studies have shown the PT/INR is a poor predictor of bleeding risk and many procedures can be safely carried out when the INR is mildly to moderately elevated.

Prothrombin complex concentrate (4-factor PCC) is now preferred for emergent warfarin reversal along with vitamin K according to the American College of Chest Physicians Guidelines. Plasma transfusion for non-emergent warfarin reversal is discouraged.

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| **Guideline by PT/INR threshold and clinical indication:** ***Therapeutic Use of Plasma**** Active bleeding before coagulation studies are available
	+ Massive hemorrhage protocol or massive transfusion protocol initiated
	+ Traumatic injury with hemodynamic instability (pre-MTP activation)
* Bleeding patient with multiple factor deficiencies
* Bleeding patient when a specific factor concentrate is not available
* Thromboelastography (TEG) values suggest a deficiency of plasma clotting factors in patient with active bleeding
* Portal Hypertensive Bleeding in Cirrhosis - *Correcting INR with plasma is not recommended, given that INR is not a reliable indicator of coagulation status in cirrhosis (2016 Practice Guidance by the American Association for the Study of Liver Diseases)*
* Plasma exchange transfusion in thrombotic thrombocytopenic purpura
* INR greater than 1.5 and intracranial hemorrhage; prothrombin complex concentrate unavailable or contraindicated

***Prophylactic use of plasma******Note****: Prophylactic use of plasma to reduce risk for bleeding prior to invasive procedures for patients with a prolonged PT/INR is not supported by strong evidence.****Note****: Vitamin K alone or 4-factor PCC with vitamin K should be used instead of plasma in patients* *receiving warfarin.* * **Low risk (blood loss) procedures**
	+ INR in the range of 2.0-3.0, patient unresponsive to Vitamin K and undergoing low risk procedures (for full list refer to 2019 Society Interventional Radiology Guidelines)
* **Surgical intervention** - INR greater than 2.0, patient unresponsive to Vitamin K
* **High-risk procedures**
	+ INR greater than 1.8, patient unresponsive to vitamin K and undergoing high-risk procedures (for full list refer to 2019 Society Interventional Radiology Guidelines)

**\*Note:** TIPS and transjugular liver biopsy must often be performed at an INR > 1.8 in patients with hepatic coagulopathy. Data suggest that these patients may have normal thrombin generation and may be at lower bleeding risk than indicated by the INR. For TIPS, If INR is acutely elevated from baseline or >3.0, consider checking fibrinogen and if <100mg/dL give fibrinogen replacement (cryoprecipitate or fibrinogen concentrate).  |

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